Course title: PHT 6186C Therapeutic Exercise I  Summer 2019

Course description: The purpose of this 2 credit course is to provide the student with a basic foundation for selection, modification, and progression of appropriate exercise interventions for individuals who have movement dysfunction due to problems with motor function (e.g. strength, motor control) Dutton Ed.3 Table 4-17. Emphasis is placed on understanding normal and impaired movement through discussion of task analysis and normal motor control. The ICF model of enablement, the systems model of motor control and the task oriented approach to movement analysis will be used as frameworks for evaluating simple (not complex) movement dysfunction and for developing progressive intervention plans.

Course prerequisites: Course participation is limited to entry-level DPT student in their first year of the UF program.

Credit hours: 2 credits

Course instructor(s): Gloria Miller, PhD, PT gtmiller@phhp.ufl.edu
Adjunct instructor: Mike Hodges PT, MHS, OCS hodgmj@shands.ufl.edu
Teaching Assistants: Abigail Wilson, DPT Abigail.Wilson@phhp.ufl.edu
Camille Jamshidi, DPT (3rd year graduate) camille0802@ufl.edu

Clock hours: 3: 1 lecture/discussion (1.25) 2 lab (2.5) see summer schedule

Class time: Monday (quiz/lecture) 8:00-9:15; Monday lab 9:30-12:00/12:30-3:00

Office hours: by appointment via email or personal request.

Objectives: At the conclusion of PHT 6186C the student will be able to
2. Define/describe normal motor control, skilled movement, and motor learning/parameters. Use each of these to describe movement control problems and to design intervention.
3. Define prescriptive therapeutic exercise program and functional re-training.
4. For a given case and details (to include health condition, age, level/length of disability, stage of recovery, level of tissue healing, psychological consideration, pt. goals, social history, general health, exercise history, environmental and personal information),
   a. Use the ICF model, identify all the impairments that may be contributing to functional limitations and participation restrictions. Explain.
   b. Prioritize the top three impairments that are currently contributing to the greatest movement dysfunction.
5. Select appropriate exercise to address identified impairments: increase length/ROM, muscle activation, strength, endurance, coordination, postural control (balance) and walking quality, speed, and adaptability. Explain and justify selection. Perform. Demonstrate. Teach. Exercise selections may include:
   a. Stretching, inhibitive techniques, manual stretch, self-stretch
   b. P, AA, AROM, resistive (manual, weights, resistive band, machines)
   c. Straight plane, multiplanar, PNF diagonals
   d. Facilitation (recruitment) techniques
   e. Type of exercise: isometric, isontonic (concentric/eccentric)
   f. CKC, OKC, combined
   g. Stability, mobility, combined
   h. Core stability retraining and progression
   i. Postural control (balance) retraining
j. Functional movement retraining with facilitation
k. Gait retraining
l. Aquatics
m. Relaxation training
n. Alternative selections: Yoga, Pilates, TaiChi,

6. **Compare exercises** for the same impairment(s). **Determine** advantages of each for various patients, various stages of recovery and tissue healing.

7. **Design and create** an appropriate exercise program given a case study with basic history and objective measures. Given a case study with deficits impairments & function, **create an appropriate exercise program**. Provide at least two alternative exercises that are equally effective. Provide two exercises that are less challenging and two that are the next level of progression towards STG/LTG (function)
   a. e.g. Shoulder flexion 0-90. 1) Sit in chair/pelvis/trunk stable. 2) Stand against wall. 3) Sit on stability ball (add trunk) 4) Stand with PNF pattern across trunk, no wall. 5) Change resistance. Simple to complex.

8. **Select initial dosage and practice parameters** based on case study details. Explain, justify. **Integrate** knowledge and skills from BSI, BSII, exercise physiology, and exam/eval.

9. **Demonstrate the skill of effective and efficient teaching** with exercise and task specific retraining.
   Use the individual characteristics of the patient, characteristics of the learner at each stage of motor learning, and the VITAL sequence. (include demonstration, laymen’s terms, guided movement, motivation, attention, positive feedback, instill confidence, appropriate feedback, practice parameters) **Modify** teaching skills based on instructor feedback

10. Demonstrate competence and confidence explaining rationale for exercise, relationship of exercise to function and correcting patient performance with verbal, tactile, and guiding feedback.

11. **Demonstrate appropriate response** to patient performance with exercise and functional re-training. Instill rapport and confidence.

12. **Reevaluate/modify/progress** exercise program of a patient within session and return sessions.
   a. Modify
   b. Return demonstration of previous prescribed HEP
   c. Progress

13. **Facilitate** patient’s/client’s, family’s and others’ understanding of the the problem, relationship to goals, and how physical therapy may intervene. Enhances motivation. Demonstrates shared decision making PT-pt.

14. **Further develop** a comprehensive examination/intervention for a selected patient with specific movement problems (coordination, balance, trunk and core control, limb control/fractionated movement) inclusive of standardized assessments. Conduct assessments with accuracy, document, develop LTG/STG and a starting plan of intervention with sound rationale. Plan patient progression (see case studies). Use planned progression to analyze and select appropriate intervention.

15. **Accurately document movement analysis**, plan of care and specific intervention plan, pt. response to single episode of care, patient education/instruction, and modification/progression of program as necessary. Able to construct effective HEP with pictures/explanations.

**Instructional Methods:** Blended learning, lecture, on line educational experiences, demonstration, explanation, discussion, authentic cases, return demonstration, practice, and modification

Blended Learning (e.g. video analysis, TBL, evidence analysis, role model, practice, case studies)

*What is blended learning and why is it important?*

A “blending learning” class uses a mixture of technology and face-to-face instruction to help you maximize your learning. Knowledge content that would have traditionally presented during a live class lecture is instead provided online before the live class takes place. This allows face-to-face teaching to
focus on course activities designed to help you strengthen higher order thinking skills such as critical thinking, problem solving, and collaboration. Competency in these skills is critical for today’s health professional.

What is expected of you?
You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.
**Required Textbooks/Materials:**
*Please use syllabus as a Guide to materials to read*
- Course Web Page: Canvas and attached resources (e.g. case videos)

**Materials required:**
- Laptop/tablet (for lec/lab, practicals, quizzes, in class assignments.)
- Proper attire for lab (T shirts, sports bra/camisole, loose waist short/mid thigh length)
- Clinic attire guest lectures and practicals (if noted)

**Class preparation/Instructor expectations:**
- Lab attendance mandatory – (students are allowed one unexcused “miss”) Must notify instructor of planned “miss”. See grading below.
- Students come to lab properly and prepared with all materials/equipment.
- Lab time is an opportunity to perfect your skills, and get feedback from faculty
- Students utilize feedback to progress with professional abilities.

**ASSIGNMENTS & GRADING:** (see grading scale current student handbook online)

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>8 quizzes 2.5% each (half old/half new)</td>
<td>20% grade</td>
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<tr>
<td>In class assignments</td>
<td>P/F (see below)</td>
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<tr>
<td>Student presentation aquatics =</td>
<td>5% of grade (group)</td>
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<tr>
<td>Practical documentation</td>
<td>5% (2.5% each)</td>
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<tr>
<td>Practicals</td>
<td>10% of grade (5 points each) 90% on practical = 4.5%</td>
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<td>2 written exams 30% each or</td>
<td>60% of grade</td>
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<td></td>
<td>100%</td>
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<tr>
<td>2 practical based case studies P/F (based on 90% pass rate)* please see Student Handbook if failed practical</td>
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Lab attendance – Required (student missing > 1 lab, lose one grade level e.g. A becomes A-)

**Grading Scale:**

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<tr>
<th>Grade</th>
<th>Points</th>
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<tr>
<td>A</td>
<td>4.00</td>
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<tr>
<td>A-</td>
<td>3.67</td>
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<tr>
<td>B+</td>
<td>3.33</td>
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<tr>
<td>B</td>
<td>3.00</td>
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<tr>
<td>B-</td>
<td>2.67</td>
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<td>C</td>
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<td>D</td>
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**Test Scores** will be posted within one week of the exam. Every effort will be made to return exams in a timely manner for your review. Your patience is appreciated. Students receiving a grade of “C” (less than "80") or less will be required to meet with the instructor. A time will be scheduled for all class members to review the exam with the answer key. After exams have been returned, grades will not be changed once a week has elapsed. Students wishing to discuss exam questions should schedule individual appointments. Students are responsible for checking with the instructor to ensure that the grade is recorded properly if the grade has been changed.

**Dress Code:** Professional T shirts and shorts are appropriate attire for lab, although some exercise interventions, e.g. PNF, will need the use of a sports bra for female students. Lecture attire per Student
Handbook.

**Professional Behavior:** Effective professional behavior is critical for a successful transition from the classroom to the clinical setting. The faculty recognizes the importance of these behaviors and has incorporated the development as well as evaluation of these behaviors into each academic course. In order to demonstrate safe and effective professional behavior prior to clinical visits that occur in the third semester of the curriculum, all students must attain “beginner level” as demonstrated by behaviors in the classroom and lab by the end of the second semester in the curriculum. Students will formally self-evaluate their professionalism at midterm and end of second semester. Additional feedback will be provided by peers, instructors, and teaching assistants. Additionally, students must demonstrate 100% safety on all practical exams throughout the curriculum. Should a student fail a practical exam, due to safety or additional reasons, they will have only one opportunity to repeat the exam. Students must maintain entry-level professionalism throughout the remainder of the academic and clinical curriculum. Failure to do so will prevent the student from advancing in the curriculum.

**Academic Honesty:**
In this professional program we are particularly sensitive to students submitting independent work and to using complete and accurate referencing in complying with the University of Florida Rules - 6CI-4.017 Student Affairs: Academic Honesty Guidelines. Further details regarding the University of Florida honesty policy is available at: [www.aa.ufl.edu/aa/Rules/4017.htm](http://www.aa.ufl.edu/aa/Rules/4017.htm)

All students are required to abide by the Academic Honesty Guidelines, the following pledge has been accepted by the University and is expected of all students:

“I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University.”

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by UF students, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

**Accommodations for students with disabilities:** Students requesting classroom accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings/Assignments/Prep work/TBA</th>
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<tbody>
<tr>
<td>Lec 1104 Lab 1109</td>
<td>Quiz / mini-test weekly weekly (8:00 – 8:15) Lec (new material) / application / Discussion Lab</td>
<td>Therapeutic Exercise: Foundations and Techniques (Kisner and Colby) 7th Edition Improving Functional Outcomes in Physical Rehabilitation (OSullivan/Schmitz) 2nd Edition BLACK (new material): required readings BLUE (review-responsible for prior courses) PURPLE (optional)- supplemental MSKI/POD</td>
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<td><strong>Week 2</strong> May 20</td>
<td><strong>Quiz 1</strong>: 10 Questions 5 old includes BSII/5 new (see study guide) Lec: Motor Learning. 3 cases with shoulder, hip, knee Lab: Motor learning, teaching, cognitive phase of learning. Phase I: (review from EE) Intervention: maintain, stretch, kinesthetic training, retard atrophy, isometrics, multi-angle isometrics Phase II: Controlled motion for 3 cases shoulder, hip, knee Joints: Focus hip/knee / ankle (shoulder)</td>
<td>OSullivan/Schmitz Ch. 1 and 2 (Week 1) K&amp;C (Ed.7) 31-37 Practice parameters K&amp;C (Ed.6) (31-37) Practice parameters K&amp;C 188-192 Review (Ex Phys) Exercise types: isometrics, concentric, eccentric. K&amp;C Ch. 3 ROM – review. Note AA exercise, pulleys, use of T-bar/wand, pulleys. K&amp;C: Ch 21 Knee : 770-775 (review) 775-830: not required/supplemental MSKI 784-786: (Ed.7) Table 21.1 and 21.2 (TKA) 780-782: (Ed.6) Table 21.2 and 21.3 (TKA) 830-841: (Ed.7) Exercise for knee 829-837: (Ed.6) Exercise for knee K&amp;C: Ch 22 Ankle: 849-855 (review) 855-888 not required/supplemental MSKI 888-896: (Ed.7) Exercise interventions for ankle</td>
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<td><strong>Week 3</strong> May 27</td>
<td>Lecture on line. Make up lab Th. May 30. 8:15-2:00 (1109) <strong>Quiz 2</strong> All Thursday May 30 8:15-8:30 (available remote) Lab B: 8:30-10:45 Lab A: 11:15-2:00 Phase I: Isometrics, multi-angle isometrics Phase II (controlled motion): Partial ROM, PNF (FES, Kinesiotape) Neuromuscular facilitation techniques (stretching, activation) Joints: Focus ankle/knee / hip</td>
<td>K&amp;C (Ed.7)Ch. 4 Stretching 82-87 K&amp;C (Ed.6)Ch. 4 Stretching 72-77 (87-93 review from Ex Phys/BSII), K&amp;C (Ed.7) Required: 95-108, 112, 117-122, K&amp;C (Ed.6) Required: 85-98, 102, 108-113, OSullivan Ch. 3 PNF 35-41 syncs with natl exam K&amp;C: Ch 21 Knee – same as Week 2 K&amp;C: Ch 22 Ankle – same as week 2</td>
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<td><strong>Week 4</strong> June 3</td>
<td><strong>Quiz 3</strong> Introduction to PNF (20 min). Watch this before reading PNF (see readings from Week 3) Strengthen, initial dosage, progression (BSII) Acute (hospital), Subacute, Acute rehab/Home Health, OP, Community: Levels of acuity, levels of deconditioning Joints: Focus trunk, hip, knee, ankle</td>
<td>K&amp;C. Ch. 6 review all (correlate with BSII) (Ed.7)Required: 178-179, 186-192, 200-202, 207-215 (focus on LE), 229-238 (equipment) (Ed.6) OSullivan Chapter 3 : Skim. Early mobility+trunk K&amp;C: Ch 20 (Ed.7) The Hip (review) 714-721 721-750: not required/supplemental MSKI/POD Required: Box 20.1, 20.4, 20.6 (Total hip arthroplasty) (Ed.6) (Ed.7)750-763: Exercise interventions for the hip includes Box 20.10</td>
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<td><strong>Week 5</strong> June 10</td>
<td><strong>Quiz 4</strong> Functional strengthening. OKC/CKC Joints: Focus trunk, hip, knee, ankle</td>
<td>K&amp;C: Ch. 6 OKC/CKC 195-200. OSullivan/Schmitz. Ch 5 and 6 (skim) OSullivan/Schmitz: Ch 6. 138-150</td>
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| Week 6 | June 17 | Exam I 8:00-9:15 1104 (35% grade)  
Practical I 9:30-4:00 1109 (5% grade)  
Documentation due by 11:59 pm on Canvas (2.5% grade)  
Lecture: Thursday  20 Dr. Beneciuk Time 12:30-2:00 pm 1104 | Core presentation/Beneciuk TBA  
K&C Ch. 14 The Spine  417-422 review  
Required: 423-439  
Ch 15 Spine Pathologies – Management –  
supplemental MSKII |
|---|---|---|---|
| Week 7 | June 24  
No AW  
Jun 23-30 | Balance/Gait  
Trunk measures sit/stand  
Joints: trunk, hip | K&C Ch. 16 Spine exercise  p. 491-499  
506-513 Review of T/Lspine mobilization  
513-543 Attention T/L Spine  
K&C Ch. 8 Exercise for balance  
OSullivan/Schmitz:  Chapter 7 Exercise for  
postural control and standing balance (skim) |
| Week 8 | July 1  
No AW  
July 3-5 | Joints: Cervical/scapula/shoulder  
**Quiz 5**  
Upper quarter PNF starts. Scapula, cervical, shoulder | K&C: Ch. 16 Cervical spine exercise  
497-500  
500-502 Review of C spine exercise  
516-517, 519-523,529-530  
Review Aquatics Prep before pool experience |
| Week 9 | July 8  
8:00-9:15  
**Aquatics presentations**  
**Quiz 6 in lab**  
Cervical, scapula, shoulder continued in lab  
Aquatics labs  M T W  5:00-6:00, 6:00-7:00  
**NOTE**: Please notify us in advance if you have Gaitor Challenge (M)  
or Clinic Wed | K&C Ch. 9 Aquatic Exercise  
Kisner and Colby  Ch. 16 Spine exercise  
Required  Cervical Spine  497-500 |
| Week 10 | July 15 | **Quiz 7**  
Shoulder/scapula/elbow continued  
Exercise, PNF | K&C. Ch. 17 Shoulder girdle/shoulder  
546-552 Review of anatomy/biomechanics  
552-594 not required- Pathology &  
Management: supplemental MSKII  
594-617 Exercise Intervention for Shoulder  
Joint oscillation p. 112, 103-105, 589-610 |
| Week 11 | July 22 | **Quiz 8**  
Relaxation techniques  
Elbow/hand | K&C Ch. 18:  Elbow/forearm 623-626 Review  
p. 116-117 manual stretch, PROM, AAROM  
627-645 not required. Pathology/management  
of elbow forearm  
p. 645-652 Exercise Intervention elbow/forearm  
K&C Ch. 19  Wrist/hand 657-663 Review  
663-701 not required. Pathology management.  
Supplemental  MSKII  
705-708 Exercise interventions |
| Week 12 | July 29 | **Exam II Concepts Comprehensive.** 2nd half of course material  
8:00-9:15  
Practical II – documentation. completed 1 hour post practical |